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09/731,678	12/06/2000	Sung-Hee Do	A0734/7001 (EJR)	9300

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SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>20 December 2006</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *96-113* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *96-113* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This action is responsive to the Applicant's response filed 12/20/2006.

As indicated in Applicant's response, no claims have been amended. Claims 96- are

pending in the office action.

Amendment and request under 37 § 1.48(b): Objections

2.   The request for the deletion of an inventor in this non-provisional application under 37

CFR 1.48(b) is deficient because: there is no change in the claims as of the present submission as

a direct result of the Office Action in effect and filed as of 8/16/06.

A) That is, according to CFR § 1.48(b), any amendment wherein a deletion of subject

matter or cancellation of claims requires proper signed action from the party set forth under CFR

§ 1.33 (b) (Applicant's representative or assignee) to the effect of establishing the following:

(i) effectuating the amendment with removal of subject matter <u>as a result</u> from a

prosecution;

(ii) acknowledging that the remaining subject matter in the amendment requires removal

of names of inventors (that have become no longer pertinent to claimed invention) as a direct

consequence of said cancellation or removal of claims;

(iii) filing the amendment addressing the above claims change (or deletion) along with a

request under CFR 1.48(b) with appropriate fees under 1.17(i) in order to request removal of the

inventors that are identified from (ii)

The presently submitted Request under § 1.48(b) does not fulfill the above requirements,

as follows:

as per (i) the prosecution of record and filed 8/16/06 is not perceived as having triggered

any removal of claims, i.e. the claims presently resubmitted as 96-113 are identical to those

previously submitted in 11/23/05;

as for (ii), there is no statement from the Applicant or representative that would

substantially establish how the amendment (with deletion thus effected) corresponds solely to the

a subset of inventors, as opposed to belonging to whole Inventive Entity set forth and filed in the

original Oath of Declaration;

as per (iii), the filing of an amendment with change of claimed subject matter is NOT

present as a result of the outstanding Office Action; i.e. the submitted claims have to include

removal/deletion; that this removal has to be directly subsequent to the current state of

prosecution, and submitted with a proper § 1.48(b) including a statement required in (ii).

In short, if a prosecution stage triggers any deletion of claimed subject matter, the

ensuing amendment to the effect of submitting the deletion/removal has to be accompanied

timely with a proper § 1.48(a) explaining why the remaining claimed subject matter (as

resubmitted) is pertinent only to a subset of the original Inventive Entity, thus requesting

removal of part of the inventorship that is commensurate with that change.

B) Applicants' repeated submissions in response to the Examiner's Office Actions

pertinent to the remaining claims 93-113 have been deemed silent to any need to remove

inventorship, and otherwise receptive to said prosecution of record, i.e. implicit admission of the

scope of the inventorship relevant to the claimed subject matter being addressed (claims 96-113)

by the various stages of prosecution.

That is, the removal of claims 1-95 effectuated **as per 11/23/05** as mentioned by Applicants had been submitted (as claims 96-113) without a timely and proper § 1.48(b) as a consequence of the prosecution of 5/19/05. The subsequent Office Action filed 2/24/06 did not generate any changes in the claims, which remained unchanged (claims 96-113), and if they did change, a proper § 1.48(b) would have to be filed subsequent to that Office Action, which did not appear to be the case. Claims 96-113 resubmitted **as of 7/17/06** had again been without a statement from the Applicant declaring that the remaining subject matter require that some inventors' names be removed as otherwise required for a proper § 1.48(b). It is noted that only after the Office Action as per 8/16/06 has been in effect did the Applicants decide to remove the inventors' name to readjust to the subject matter claims, an step that would have to be properly and timely taken much earlier (e.g. 11/23/05).

It is unclear as to how the Office actions filed as rejections of 2/24/06 and then again 8/16/06 addressing the remaining claims 93-113 did not trigger any declaration from the Applicants to the effect that the remaining subject matter only pertains to a subset of the original Inventive entity.

Lacking evidence to support why the filing of a 1.48(b) is not timely filed to properly address a change in scope of a claimed subject matter and inventorship, it is deemed that the grounds for a proper request as a § 1.48(b) thus submitted above are insufficient. Therefore, the request for removal of inventors name is not considered; thereby the subject matter presented by claims 96-113 as now resubmitted (without any deletion) will be treated in the context that they are pertinent with the original set of inventors as set forth in the original Application, i.e. in the OATH of DECLARATION.

Claim Rejections - 35 USC § 101

3.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or
> any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and
> requirements of this title.

4.   Claims 96-113 are rejected under 35 U.S.C. 101 because the claimed invention is directed

to non-statutory subject matter.

> The Federal Circuit has recently applied the practical application test in determining whether the claimed
> subject matter is statutory under 35 U.S.C. § 101. The practical application test requires that a " useful,
> concrete, and tangible result" be accomplished. An "abstract idea" when practically applied is eligible for a
> patent. As a consequence, an invention, which is eligible for patenting under 35 U.S.C. § 101, is in the
> "useful arts" when it is a machine, manufacture, process or composition of matter, which produces a
> concrete, tangible, and useful result. The test for practical application is thus to determine whether the
> claimed invention produces a "useful, concrete and tangible result".

Specifically, claims 96 recites a method for designing software system, comprising

defining design parameters (DP) parameters, decomposing set of functional requirements (FR)

and said parameters to create hierarchy thereof, *defining a matrix* for mapping parameter and

requirements of such hierarchy, and use the matrix to further *define object oriented structure*

wherein a FR represents an OO object and a DP represents a input to said object. The claim as a

whole amounts to *defining* a software structure with descriptive elements representing parts of

the software structure. The final result thus conveyed does not reasonably teach that a tangible

real-world result has been generated at the end of the method steps leading to defining of a

software structure. That is, such structure even defined via a software design method remains

but an abstract entity internal to a definition process, hence not externalized into a tangible entity

because a mere definition process appears to be just a internal or abstract function effectuated by

a programmatic process. Lacking the characteristic of being tangible, the abstract entity is

therefore not useful because it remains non-practical, not perceivable in order to be of any use;

and without being of any use, it cannot be a concrete application result. The claim for failing to

convey the yielding of a concrete, useful and tangible result, is rejected for leading to a non-

statutory subject matter.

Claim 105, similar to claim 96, amounts to defining a structure without any further

teaching on any practical use of the structure in order to yield a real world useful result. And in

light of the rationale as set forth above, claims 97-104, and 105-113 are rejected for the

deficiency of not fulfilling the Practical Application requirement.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

6.   Claims 96-113 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nam P.

Suh, "Axiomatic Design Theory for Systems", *Research in Engineering Design*, Vol. 10: pp.

189-209, MIT, 1998 (hereinafter Suh_1), further in view of Sung-Hee Do and Nam P. Suh,

"Systematic OO Programming with Axiomatic Design", IEEE Computer, Vol. 32, No.10, Oct

1999, *Integrated Engineering*, pp. 121-124 (hereinafter Suh_2).

As per claim 96, Suh_1 discloses a method of designing a software system, comprising:

defining a set of functional requirements that describe what the software system is to

achieve (e.g. FRs – Fig. 1- pg. 195; Fig. A1, pg. 204; ch. 4.1, pg. 191);

defining a set of design parameters, where each design parameter in the set satisfies at

least one of the functional requirements (DPs – Fig. 1, pg. 195; Fig. A1 – pg. 204);

decomposing the set of functional requirements and design parameters to create hierarchy

of functional requirements and a hierarchy of design parameters (e.g. *FR and DP hierarchies -*

Fig. 1, pg. 195; chp. 6.1→6.3, pg. 194-196), wherein at least one functional requirement of the

set of functional requirements is a parent functional requirement at a first level in the hierarchy

of functional requirements and is decomposed into at least two child functional requirements at a

second level in the hierarchy that is below the first level, and wherein the at least two child

functional requirements collectively accomplish the parent functional requirement (see FR1 →

FR11, FR12 – Fig. 1;, *step 1: FRs mapping DPs*, ch. 4.2→ 4.4, pg. 191-193);

defining a design matrix that maps each design parameter in the hierarchy of design

parameters to the at least one functional requirement in the hierarchy of functional requirements

that the respective design parameter satisfies (e.g. ch. 4.2→ 4.4, pg. 191-193; chp. 6.1→6.3, pg.

194-196); and

using the design matrix to define software modules (Fig. 2-4, pg. 196; ch. 6.4 pg. 197) of

the software system, wherein at least one functional requirement in the hierarchy of functional

requirements represents a software object of the software system (e.g. Fig. 3, pg. 196; *modules*

Ms - ch. 6.6, pg. 198; ch. 7, pg. 199), and wherein at least one design parameter in the hierarchy

of design parameters represents an input to the software object (e.g. *input to M1231* – right col.,

ch. 6.2, pg. 195; ch. 6.4 pg. 197).

But **Suh_1** does not explicitly disclose that the FR-derived modules being designed from

the matrix object are object-oriented structures. The concept of modularization of software

architecture with parent/child relationship (see ch. 6.1 pg. 194 to ch. 6.4, pg. 197; Fig. 1, 3, 4)

considered by Suh_1 along with reassembling of modules from a database (see ch. 6.7, pg. 199)

and reusability implemented via library of software modules (see ch. 8.1, pg. 200) suggest the

known benefits of object-oriented implementation of large software systems at the time the

invention was made, some of which being tracking of changes (or failures) and understanding

interaction dependency between modules (see Suh_1, ch. 10, pg. 203). **Suh_2**, in a similar

approach to implement axiomatic design to large systems analogous to Suh_1, teaches the same

decomposition of levels of software modules via matching of DP/FR using a control matrix; and

based upon the module derivation, teaches identification of classes as well as its interfaces, and

attributes or methods thereof to represent a DP (see Fig. 1, pg. 122; middle column, pg. 124).

Based on the concept of independent reassembling of modules per development instance and

reusability control from Suh_1, it would be obvious for one skill in the art at the time the

invention was made to implement Suh_1 modules associated with each FRs, so that these

modules are reuse object-oriented classes or interfaces as taught by the approach by Suh_2,

because the creation of OO or classes instances as they are retrieved from reuse can support

relationships (as in a *interface*) between object classes and object operations, such that existing

designs can be reused to support further decomposition, and/or creation of new designs, or to

help diagnose or handle tracking due to software change (see Suh_2: middle pg. 121; middle

para, pg. 124).

As per claim 97, Suh_1 teaches software modules representing equivalent of hardware

assemblies (ch. 4.2 pg. 191) to match functional requirements, but does not explicitly disclose

that at least one element of the design matrix and the at least one design parameter represents an

operation performed by the software object; but in view of the classes and method teaching from

Suh_2 as set forth above, the operation limitation, i.e. a method by a software object in light of

OO implementation from above, would have been obvious.

As per claim 98, Suh_1 discloses that wherein the act of defining the set of define

parameters further comprises determining the set of design parameters by mapping the set of

functional requirements into a physical implementation domain (e.g. Fig. A1, pg. 204).

As per claims 99-100, Suh_1 discloses an act of determining if the design matrix is

decoupled (eq. 15, pg. 197); and is not decoupled, manipulating the design matrix into lower

triangular form (e.g. middle matrix line 2, 7; eq. 15, pg. 197).

As per claim 101, Suh_1 (in view of Suh_2) discloses wherein the at least one

functional requirement that represents a software object includes at least two functional

requirements, and wherein a first of the at least two functional requirements represents a first

software object and a second of the at least two functional requirements represents a second

software object (e.g. Fig. 1, ch. 6.1-pg. 194-195; ch. 6.6. pg. 198; ch. 4.5 pg. 193).

As per claim 102, Suh_1 discloses defining a relationship between the first software

object and the second software object using a junction (e.g. Fig. 2-3, pg. 196).

As per claim 103, Suh_1 discloses defining a third software object by combining the first

software object and the second software object according to a type of the junction (e.g. Fig. 2-4,

pg. 196).

As per claim 104, Suh_1 discloses wherein the type of the junction is one of: a

summation junction; a control junction', or a feedback junction (e.g. Fig. 2-4, pg. 196).

As per claim 105, Suh_1 discloses computer readable medium encoded with instructions that, when executed on a computer system, perform a method of allowing a user to define a software system (e.g. *software systems* – Introduction, pg. 189), the method comprising allowing the user to:

define (a set of functional requirements ...);

define (a set of design parameters);

decompose (the set of functional requirements and design parameters ...);

define (a design matrix that maps ...); and

using the design matrix (to define software modules...) as recited in claim 96.

Thus, all of which limitations are respectively addressed according to the rejection set forth in claim 96.

But Suh_1 does not disclose that the software modules are to define an object-oriented structure. However, this limitation has been addressed as obvious in claim 96.

As per claims 106-113, these claims correspond to the claims 97-104 for reciting the same subject matter therein respectively; hence are rejected using the rationale set forth therein, correspondingly.

Claim Rejections - 35 USC § 102

7.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

8.   Claims 96-115 are rejected under 35 U.S.C. 102(a) as being anticipated by Nam P Suh,

Axiomatic Design of Software, copyright @ August 22, 1999, chapter 5, pp. 2-74 (hereinafter

SuhNam – submitted with IDS filed 7/17/2006).

As per claim 96, SuhNam discloses a method of designing a software system,

comprising:

defining a set of functional requirements that describe what the software system is to

achieve (e.g. ch. 5.2.1, pg. 8-12);

defining a set of design parameters, where each design parameter in the set satisfies at

least one of the functional requirements (e.g. ch. 5.2.1, pg. 8-12, subpara (i) → (iv));

decomposing the set of functional requirements and design parameters to create hierarchy

of functional requirements and a hierarchy of design parameters (e.g. 5.2.1, pg. 8-12, subpara (i)

→ (iv); ch. 5.3. pg. 14-24), wherein at least one functional requirement of the set of functional

requirements is a parent functional requirement at a first level in the hierarchy of functional

requirements and is decomposed into at least two child functional requirements at a second level

in the hierarchy that is below the first level, and wherein the at least two child functional

requirements collectively accomplish the parent functional requirement (e.g. ch. 5.3, pg. Pg. 14-

24; Fig. Ex 5.1.a; step 4, pg. 16);

defining a design matrix that maps each design parameter in the hierarchy of design

parameters to the at least one functional requirement in the hierarchy of functional requirements

that the respective design parameter satisfies (e.g. ch. 5.3, pg. Pg. 14-24); and

using the design matrix to define an object-oriented structure (e.g. ch. 5.4 – pg. 36-55) of

the software system, wherein at least one functional requirement in the hierarchy of functional

requirements represents a software object of the software system (e.g. ch. 5.4 – pg. 36-55), and wherein at least one design parameter in the hierarchy of design parameters represents an input to the software object (e.g. step 4, pg. 16; ch. 5.4.3 pg. 41-51).

As per claims 97-104, see ch. 5.2.1 pg. 8-12: subpara (i) → (iv); ch. 5.3. pg. 14-24; ch. 5.4 – pg. 36-55; ch. 5.6, pg. 58-65.

As per claim 105, SuhNam discloses computer readable medium encoded with instructions that, when executed on a computer system, perform a method of allowing a user to define a software system, the method comprising allowing the user to:

define (a set of functional requirements ...);

define (a set of design parameters);

decompose (the set of functional requirements and design parameters ...);

define (a design matrix that maps ...); and

using the design matrix (to define software modules...); all of which steps as recited in claim 96.

Thus, all of which limitations are respectively addressed according to the rejection set forth in claim 96.

As per claims 106-113, these claims correspond to the claims 97-104 for reciting the same subject matter therein respectively; hence are rejected using the rationale set forth therein, correspondingly.

Response to Arguments

9.   Applicant's arguments submitted 12/20/2006 with respect to claims 96-113, have been considered but are not persuasive. Following are the Examiner's observations in regard thereto.

35 USC § 101 Rejection:

(A)   Applicant has mentioned that the USPTO Interim Guidelines states that 'rather on

whether the final result achieved by the claimed invention is useful, tangible and concrete'

(Appl. Rmrks, pg. 2, bottom). The rejection has set forth an analysis by which it is deemed that

the final result is not tangible; from there, that it is not useful; and thereby not even application

concrete result. The claim recites defining requirements and parameters, decomposing them to

create a hierarchical set and defining a matrix to map that hierarchy, and using this matrix to

define an object-oriented structure. These defining steps of structures and/or hierarchy, matrix

amounts to software implemented steps action operating of software-implemented entities, like

parameters, matrix, and OO structure. A programmatic sequence of action to generate defined

OO structure, matrix (2-dimensional structure) or hierarchy of parameters cannot be perceived

as application real-world data, lacking teaching to that application-level perception effect (e.g. a

visual tool to display such defined structures); hence data structure remain software entities in

the layer of runtime execution of the programmatic processe exactly as a Matlab simulation tool

in a running mode operating on defined structures, containers and 2-D arrays to effectuate a

programmatic workflow of some industrial algorithm, all of which amounting to internal

computer flow having programmatically processed entities not visible to an application layer of a

real-world user. Thus, as recited, the matrix or the OO being defined and used to define one

another does not yield a real-world tangible data perceivable at the application level. Non-

tangible entities remain abstract, and abstract entities cannot be of any application utilization in

the context of a practical application. Not tangibly accessible leads to being not useful, and

consequently not concrete a result in terms of consistent yield for practical, repeatable and useful usage.

(B)   Applicants have submitted that a *Design Matrix* is Useful, has specific, substantial utility and is a TANGIBLE RESULT and CONCRETE RESULT (Appl. Rmrks pg. 3-5). The Design Matrix as recited has been interpreted as a 2-Dimensional programmatic structure; and based on the parameters hierarchy to enable mapping of said matrix to yield more defined OO structures, the rejection has set forth that the Matrix is mere software structure being defined to enable defining of more structures in a programmatic process. There are arguably results in terms of internally generated concrete and useful entities at the level of the programmatic steps taken by the software design method on the onset; but the Interim Guidelines addresses the tangible aspect of an Practical Application result, such that the result should be an tangible result satisfying the requirements that it be also concrete and useful. Internal entities of a computer method cannot be perceived as application tangible data, lacking sufficient and reasonable description to that effect. The claim lacks any indication about how the defined structures can be tangibly manipulated or accessed at the level of user's application for those structures to be on any useful utility at that level. The user might use a GUI tool to execute a MATLAB simulator, and if the simulator in its flow of execution maps data and generate more defined structures, the mere fact of defining more structures as a result of the computer execution does not necessarily dictate in a broad sense the actual realization of any tangible data being accessible at the level of the GUI tool. The rejection does not mention the requirement of a hardware support, but only focuses on the realization of final result being TANGIBLE, i.e. a final result perceived by the application level or by a user making use of the claimed method. Based on the interpretation of what a

DESIGN MATRIX amounts to, the final result from the claim is deemed low level respective to

a application level, and otherwise commensurate only with computer execution internal level,

thus largely non-perceivable by any user at a GUI level. The above Applicants' points are not

persuasive.

USC § 103(a) Rejection:

(C)   Applicants have submitted that 'Suh 2' (Appl. Rmrks , pg. 5-6) does not constitute prior

art *by others* by virtue of the submission of claims 96-113 with removal of claims 1-95, i.e. via

the request under 1.48(b). The claims 96-113 had and have been submitted way back and the

inventorship corresponding to these claims have been unchanged during the course of

prosecution since 11/23/05 until recently. A proper request under § 1.48(b) has to be timely

submitted with a change in the claimed subject matter (e.g. responsive to a Restriction/Election

action) resulted from an stage or instance thereof in the prosecution. The prosecution has gone

through stages addressing the above-amended set of claims (96-113) with the original Inventive

Entity for nearly more than two cycles of Office Actions. The currently submission under §

1.48(b) suddenly requires change in inventorship whereas the same inventorship underlies the

subject matter of the above claims 96-113 in the past. Lacking explanation as to why an

unchanged set of claims now necessitates a partial removal of inventorship with respect to

established requirements stated in 35 CFR § 1.48(b), it is deemed that the request to remove

inventor's name without any change in the subject matter is not proper. The reference called

'Suh_2' remains prior *by others* with respect to the original Inventive Entity filed 12/06/2000.

The arguments about propriety of the references applied in the 35 USC 103 or 102 rejection(s) are therefore not overcoming the rejection. Refer to the Objections to the § 1.48(b) as set forth above.

The claims will stand rejected as set forth in the Office Action.

Conclusion

10.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A Vu whose telephone number is (272) 272-3735. The examiner can normally be reached on 8AM-4:30PM/Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571)272-3756.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-3735 (for non-official correspondence - please consult Examiner before using) or 571-273-8300 (for official correspondence) or redirected to customer service at 571-272-3609.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan A Vu
Patent Examiner,
Art Unit 2193
March 7, 2007